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The Invitation of the Anthropocene: Towards a New Way of Living with All Our Relations

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Together, the human species is invited by the Anthropocene to take the archetypal hero's journey described by Joseph Campbell: Departure, Initiation, Return. Humans departed from close relations with all of nature, in many phases since recorded history, and most dramatically in ongoing colonial integration and simplification of places and peoples. We have had recurrent initiations through war, enslavement, genocide, and degraded life in all its forms, which accompanied much learning and creativity. If we accept the invitation of the Anthropocene, we can learn to return, to combine science with ancient wisdom, to recover what was lost through the experiences we have gained. In this place and in all places, we can fall in love with Earth.

How are we to date the origins of the Anthropocene, when humans shifted away from changing our environment as other species do — that is, in relation to each other and to earthly flows of air, water, soil, rocks. When did humans begin to change earthly dynamics in such a way that we destroy many other species and threaten to take ourselves down with them?

I am convinced by Foster and Clark's (2021) recent argument that although the Anthropocene must include the social and political-economic relations that led to humanity's new role in earth, the epoch must be dated geologically:

> "The geologic time scale, dividing the 4.6 billion years of Earth history into nested eons, eras, periods, epochs, and ages, is one of the great scientific achievements of the last two centuries. Each division is directed at environmental change on an Earth System scale based on stratigraphic evidence, such as rocks or ice cores… The current argument that the planet has entered into a new geological epoch, the Anthropocene, is based on the recognition that Earth System change as represented in the stratigraphic record is now primarily due to anthropogenic forces."

Foster and Clark add a helpful dimension to invite human responsibility. They note that like prior Epochs, the Anthropocene Epoch must be understood to include the geological *subcategory of Age.* They propose to name the first and present Age *within the Anthropocene Epoch* the *Capitalinian Age.* What might a *second Age of the Anthropocene* be? If we survive it will be because we take responsibility for our powers and learn to thrive in and with the earth and all its beings. Foster and Clark name this possible second Age of the Anthropocene Epoch the *Communian Age*.

Of course, dating the origin of capitalism is as controversial as dating the origin of the Anthropocene . Foster and Clark claim that the geological record supports dating the Anthropocene around 1950, when measurable radioactive sediments, plastics and petrochemicals began to change earthly processes and flows. These novel synthetic substances appearing in soil and ice were created or vastly expanded by warring governments and after World War II deployed as a substitute for natural resources by transnational corporations.

A different dating is based on a different reading of the geological record and has very different implications for thought and action. In an important article in *Nature* by two earth system scientists -- plant science and ocean paleontology --Lewis and Maslin (2015) reported finding two changes (called "spikes") in the "anthropogenic signatures in the geological record": 1964 is not far off the estimate of Foster and Clark's preferred 1950 date, but Lewis and Maslin argue forcefully and convincingly for a different marker: a *downward* spike in atmospheric carbon dioxide in 1610.

Why would carbon dioxide *dip* at that date – upending the usual assumption that human activities have led to consistent if uneven rises in atmospheric carbon? Their explanation is based in world-systems analysis and challenges the prevailing assumption that forests in the Americas were primeval before 1500, certainly not regrowth hiding the ruins of ancient civilizations. In a later co-authored analysis of data on population and land use (Koch et.al. 2019, p.24), they conclude that deaths of 55 million indigenous peoples in the Americas over the century after 1492 led to abandonment of about 56 million hectares of agricultural area and consequent growth of forests that sequester about 15 times more carbon. Recently – asking related questions --- archaeologists have discovered remains of societies whose inhabitants have died or fled, from the Amazon through present Mexico to the Mississipian cultures of North America.

Lewis and Maslin (p.175) call 1610 the Orbis Hypothesis "from the Latin for world, because post-1492 humans on the two hemispheres were connected, trade became global." The century between 1492 and 1610 not only decimated indigenous peoples but also redistributed plants and animals in ways that transformed landscapes across the world. What Crosby (2003 [1972]) named the Columbian Exchange shifted the balance of living in "old" and "new" worlds (in inherited Eurocentric terms) and transplanted not only encultured humans, but also plants and animals from one continent to another. Sugar, a plant of Asian origin, was one of the first intentional transplants; it could thrive in such magnitude because of genocide of indigenous Arawak in the Caribbean, the cutting of their forest habitats to create monocultures, and the forced relocation of differently encultured Africans to work the land appropriated by European elites who called themselves "planters." This reorganization was at once a drastic simplification of biocultural landscapes and reorganization of historical social hierarchies; it set in motion dynamics that constantly recur over the centuries until today in a world ever more unified by capitalist accumulation and geopolitical rivalries. Capitalist integration of ever more lands and peoples As Robinson puts it, "The tendency of European civilization through capitalism was…not to homogenize but to differentiate --- to exaggerate regional, subcultural, and dialectical differences into "racial" ones." (Robinson 2000, cited in Murphy and Schroering 2020, p.407).

Other reorganizations of biocultural landscapes were unintentional: in South America, except for the high Andes, there were no precolonial grazing animals. European cattle and horses used their feet to leave their European masters and graze their way across the continent, undermining the conditions of life of Indigenous peoples as much as the destruction of grazing bison did in North America (Crosby 1986). Still other biocultural transformations came from below, as Africans, Asians, and European newcomers brought familiar plants and animals, even in the most difficult conditions. They created diasporic agronomies and cuisines; for example, the national dish of Jamaica, which became independent after several centuries of colonial rule, consists of akee (African), salt fish (imported from the North Atlantic by planters as food for enslaved workers), and rice (either of African or Asian origin). In the other direction, maize was introduced from America to Africa and beyond, as were tomatoes, potatoes, and many more ingredients that now seem "traditional" to "old world" cuisines. To anticipate implications for the future, biocultural reorganizations from above brought together people whose creativity in surviving together made for great and continuing diversity of agronomies, cuisines, and more in the "shadow of slavery" and genocide (Carney and Rosomoff 2011).

To connect the dip in carbon dioxide in 1610 to the history of colonization of the Americas is a remarkable scientific synthesis with enormous political implications. Transforming the earth was the intent and practice of colonization, as it had already been of cutting Europe's forests. Following Lewis and Maslin, colonial reorganization of foodways and landscapes across the world can be seen as central to the Anthropocene. Carbon intensive farming (and diets), finally coming into view in discussions about causes of the Anthropocene, builds on the deep, violent history of colonial transformations of places and cultures. Biocultural landscapes in North America, at the center of accumulation and power in the food system since 1945, build on the earlier food regime dominated Great Britain , which displaced native perennial grasses, bison, and indigenous people who managed them on a vast scale by an introduced triad of wheat, cattle and European settler farmers and herders (Cronon 1991).

We now call taking whatever makes profit and brings power *extractivism,* whether of minerals or forests or soils or "hypertrophic cities" (Ajl 2014). Extraction --- taking what is profitable and making all the changes required to do so --- has been the defining principle of world-ecology since colonial reshaping of biocultural landscapes began. Even in 1931, settler agriculture in the American plains was called "soil mining" (Webb 1931). Food and agriculture have from the beginning been central to capitalism especially seen as originating in colonial integration of the planet. In a mere five centuries, biocultural landscapes have been simplified by marginalizing indigenous peoples (including those living as "peasants" in Europe) and making people dependent on the extracting powers of corporations and states. The implications of dating the Anthropocene from 1610 makes clear "how rock and climate are bound to flesh" and how a liveable future lies in "decolonizing the Anthropocene" (Davis and Todd 2017: 769).

Two Ways to Understand the Evolutionary Possibilities of Human Consciousness

Foster and Clark's imagination of a Communium Age of the Anthropocene is "a civilization rooted in communal values." They add a new dimension to Marx's words that ""… the private property of particular individuals in the earth will appear just as absurd as

the private property of one man in other men [slavery]," arguing that "In the twenty-first century, it will be essential for the great mass of humanity, the 'wretched of the earth,' to reaffirm, at a higher level, its communal relations with the earth: the dawn of another age."

However, just as there is more than one way to read the geological record, there is more than one way to think about the potential of human consciousness to shift to a new phase in Earth History. Foster and Clark's way draws on the idea of *noosphere* postulated in the 1920s by theologian Teilhard de Chardin and biogeochemist Vernadsky, which proposes an emerging epoch of the biosphere defined by *reason*. Foster and Clark conclude that "the necessary reversal of existing trends and the stabilization of the human relation to the earth…can only occur through social, economic, and ecological *planning*." They thus implicitly privilege *reason over heart and spirit* and *planning over something more adaptive and self-organizing* as the way to apply or enact reason. My passing familiarity with planning as a practice makes me sceptical that it can be democratic; even experiments like popular budgeting pioneered in Porto Alegre, Brazil, work only at the margins of government policy, and even newly created environmental institutions committed to civic participation fall to bureaucratic inertia (Quinn 2121). Not only intrinsically hierarchical states, but the system of states with clear borders that can only be defined and redefined by wars and treaties, are a form of governance that must be superseded by something ecological, let us say *bioregions*.

A different way to imagine a responsible Era of the Anthropocene arises from dating its origin by the Orbis Spike of 1610. If the Anthropocene emerged from an initial colonial genocide, leading to simplification of cultures and landscapes – of biocultural landscapes --- then 1950 is far too late to help understand how to go about "the necessary reversal of existing trends and the stabilization of the human relation to the earth." Rather than extend the planning which became central to governments and international organizations after 1950, something older and deeper needs to be recovered. If we accept the 1610 origin, then unfolding of the Capitalinium Age can be understood as continuing into the present the reorganization of biocultural landscapes through reducing the number of species, transplanting plants and animals, and reorganizing encultured humans into hierarchical categories of cultures, languages, and (re)constructed races and genders. In place of simplification, the aim is to restore complex and diverse biocultural landscapes. To accept the invitation of the Anthropocene, I think, suggests different vision of the Communian Age. The path towards diversity and relationship lies in deep transformations in thought, knowledge, and practice --- partly decolonizing ideas and practices, partly recovering lost cosmologies and ways that humans have experimented in living together with all beings in mutual respect.

A Promising Convergence Among Ways of Knowing and Acting Together

I suggest that a good working definition of *sustainability* might be to adapt the French word, *durabilité;* to *endure* as a coherent, evolving, adapting community of relations over centuries and even millennia. In her scientific research, Professor of Forest Ecology Suzanne Simard observed that the forest science she was taught fails to support enduring life by removing perceived competitors of trees it tries to maximize. Her research (and she is not alone) shows that far from competing, individuals and species live in collaborative communities in which they nourish, warn, and in other ways support each other. She concludes in her scientifically based popular book *Finding the Mother Tree: Discovering the Wisdom of the Forest* (2021), that North American West Coast indigenous peoples have acted

as conscious members of these enduring communities. Even in disrupted habitats, even when their knowledge is ignored or disdained, they sustainably manage the invisible connections among all beings --- cedars and birch, salmon and bears, waters and the many plants of the forest. Simard concludes that their practices of experimentation, observation, and adaptation – changing course when something doesn't work --- is in reality better science than supposed scientific forest management, which clears and replants to maximize a desired "resource." The same is increasingly understood for agriculture in which adaptive practices based on experiment and observation --- often called agroecology or regenerative farming --- favour diversity and complex interrelations among plants, animals, fungi, and bacteria. The link between habitats for sustainable human foodgetting --- forest, grassland, wetland, ocean and river --- is healthy soil, itself based on underground networks of organisms of almost unimaginable complexity (Montgomery 2012, Sheldrake 2021).

The implication for sustainably getting food and all else that we need is to begin with soil. For Earth Sciences, the *pedosphere* is the outermost layer of the Earth, the thin skin supporting earthly life, and consisting of dynamic interactions among air, water, minerals, and living organisms. Farmers have understood soil as the foundation of food and life, even when debt and other social obligations forced them to extract its fertility (Montgomery 2012). Even pioneers of capitalist agriculture in 18th century England, who reorganized land and labour to maximize commercial grains and livestock, focused on what they called the "heart of the soil." Soil is at the heart of earliest criticisms of industrial agriculture: the Soil Association in England (1946) and Rodale in the U.S (1930).

Appreciation of soil as the complex foundation of plant and therefore animal life, is part of a wider reinterpretation of evolution; in place of the narrow understanding of evolution as competition, which has dominated interpretations of Darwin since the "social Darwinism" of the 19th century, Lynn Margulis' (Margulis and Sagan 2002) pioneered a reinterpretation based on *symbiosis*. This looks at evolution forwards from bacteria rather than retrospectively from a human point of view. It considers merger to be the origin of complex organisms from those with only a single cell, and speciation to arise through symbiosis of genetically distinct organisms. Life unfolds through the mutual bonds within and among organisms. Symbiosis leads in many directions, from understanding the human body as consisting of communities of bacteria (the human biome) and genetically distinct mitochondria in every living human cell, to a new appreciation of the complex earth-spanning networks of fungi and other organisms sustaining life of larger beings and their habitats. Such ideas are part of a re-emerging unity of scientific disciplines called Earth Sciences. At the same time, paradoxically, Earth Sciences are making crucial discoveries by deepening specialization of disciplines, which are increasingly difficult for ordinary intelligent, curious people to follow. As a result, like founders of 19th century evolutionary theory, the boundary between amateur and professional scientists is again fuzzy; for instance, miners or farmers still discover many fossils. At the same time, in order to gather data on a scale that technology now makes it possible to analyze, professional scientists sometimes rely on a new category of *citizen scientists* to collect observations from stars to dolphins. The earliest I know of, before the internet, was continental observation and reporting of migration paths of Monarch butterflies.

By inviting us imaginatively to adopt the perspective of bacteria and other microbes, Margulis has helped to redefine consciousness in ways that resonate with much older

cosmologies. At its most visionary, convergence of scientific disciplines points to a contested but compelling vision of a living Earth. Its co-creators, biologist Margulis and atmospheric scientist James Lovelock, see life on and in Earth as self-organizing. Atmosphere, hydrosphere, and lithosphere (cycles of air, water, and minerals) continuous passing through the bodies of living beings, the *biosphere*. They name this conception after the Ancient Greek Earth Goddess, *Gaia*.

In practical disciplines of agroecology and selective forestry, integrative science converges with indigenous wisdom, not only among Pacific Northwest indigenous peoples appreciated by Simard. Within the framework of the 2007 United Nations Declaration on the Rights of Indigenous Peoples, a network of indigenous peoples agreed to a common approach to life that unifies diverse *biocultures* embedded in specific territories. Since each territory is unique, the approach to human survival is *earthly unity* based on *biocultural diversity*. Their principles are a starting point for how humans can realize our species being within Gaia: view the world holistically, respect interconnected physical, biological, cultural, and spiritual spheres of life; understand territory as fundamental; focus on relationships and processes in engaging reciprocally with the cosmos. These principles lead to actions to encourage liveliness: take only what we need; take only what is freely given; give back to renew and restore lives and relationships (Kimmerer 2015). Even in territories/ecosystems drastically changed by colonial expropriation and continuing displacements, peoples with varied cultural heritage who encounter each other in a territory can "become native to [each] place" (Jackson 1996). These principles can shape responsible governance across territories. Managing scales, not with a hierarchy of city, nation, and international institutions, but as nested and overlapping jurisdictions that mimic natural systems; for instance, nutrient and material cycling must be managed close to hand to prevent sending "waste" to an unknown place called "away." At the widest scale, even though every atom of carbon or oxygen is created in a single place, responsibility for sustaining the balance of atmospheric gases requires coordination across all places. These principles are already part of contemporary environmental thought, to close broken social and ecological circles if human life is to endure.

Most of the languages through which peoples know the territories of Earth are lost or in grave danger. Latin categories unify the words for plants, and at the same time displace vernacular terms --- in England as well as California or New Zealand --- that describe appearance, function, or other features. Scientific nomenclature allows for sharing across the globe, but also hides the indigenous names of plants and the knowledge of how to use them that are the origin of many useful drugs. English, which has so far displaced even rival colonial languages as the universal language of commerce and governance, is both a dominating and unifying force. Yet lost and endangered languages carry the knowledge of peoples who lived in far better harmony with all the beings in their habitats. These languages, cultures, and place-based knowledges have been suppressed and marginalized at great cost to our collective capacity to live as embodied and encultured beings. Wade Davis (2014) calls the legacy we are squandering the *ethnosphere*:

> the myriad cultures of the world that make up an intellectual, spiritual, and social web of life that envelopes the planet and is as important to its well being as is the biological web-of-life that we know as the biosphere. You might think of this cultural web-of-life as being an ethnosphere. And you might define the

ethnosphere as being the sum total of all the thoughts, dreams, ideals, myths, intuitions, and
inspirations brought into being by the imagination since the dawn of consciousness.
The ethnosphere is humanity's great legacy. It's a symbol of all that we've achieved and
the promise of all that we can achieve as the wildly curious and adaptive species we are.

What might a Communian Age respecting the ethnosphere and biosphere look like? For one thing, it cannot assume endurance of crumbling states, with their internal hierarchies, or of the inter-state system based on the modern notion of national sovereignty (Ruggie 1993). Even younger than capitalism, the state system and all its members show signs of sclerosis. The modern inter-state system was launched by the Treaty of Westphalia in 1648, which ended religious wars in Europe by allowing each monarch to name a national religion and repress all dissidents. It created uniform borders containing everything belonging to the national state, which uses passports, customs, and police to control movements of people, other beings, and goods. It emerged in early days of colonial conquest, extermination of indigenous peoples and enslavement and transport of Africans. It was completed in the 20th century as colony by colony gained formal independence from empires, then adapted their inherited internal hierarchies within the borders created, fought over, and negotiated by those same empires. The implications are profound: borders turn people in movement, as humans have been since our origins in Africa, into *migrants* whom states can admit or refuse; it turns goods, which humans have exchanged for as long as we can know, into *trade* when they cross borders. The inter-state system shows little prospect of agreeing to stabilize the atmosphere, or revive the diversity of life, or to accommodate people on the move. It finally resolves disputes through ever more deadly wars. More promising efforts are bottom-up (Sklair 2019).

What forms might governance take in a Communian Age? Since the early 19th century some anthropologists, political economists (especially Marx), and even colonial officials have understood the virtues of indigenous forms of governance. Early feminists in North America were deeply influenced by friendships and what they learned from indigenous women (Wagner 2001). It is likely that Canadian government was influenced for the better by familiarity with the Iriquois Federation, despite its later land thefts, repression of uprisings and forced separation of children from parents as part of brutal cultural assimulation (Saul 2009). Recovery of these legacies in all parts of the world can support reframing institutions. But most important is to build up from below, to gain control over territory, to understand that the land is the third element in conflicts over land use between indigenous and newcomers, to respect the land as a common home, to regenerate its life, its liveliness, for our children and our children's children --- to support all our relations until the seventh generation.

I suggest that governance of human societies adopt the model of ecosystems. The hydrological cycle is above and below ground as liquid and ice, and in the atmosphere as vapor. Every drop of water is in one place and at the same time in movement across space and time. All the water in Earth is all we have, a precious basis for enduring life and a basis for humans to understand and guide all our relations from the smallest to the largest. I live in Toronto and my family lives in Michigan. We are fortunate to live in the same Great Lakes Territory or Bioregion, the largest body of fresh water in Earth. Yet we are separated by a

national border. Remembering that the map is not the territory, I like to compare two images of the Great Lakes. The image from space shows beautiful, interlinked blue bodies of water below clouds. The map we use to cross the border or to regulate pollution or fishing or shipping has a dotted red line through the middle of the lakes. Fish don't have passports, but they do die from human actions. They can be revived by coordination between Canada and the U.S. but new threats emerge constantly requiring (but not necessarily calling forth) ever new inter-state, bureaucratic regulatory bodies. This is beginning with foodgetting, the continuing basis of human existence, and so basic to moving towards a new Age of relationship, respect, and reciprocity for all beings. We don't know in advance what to do with our overgrown cities and degraded countrysides and dying forests. In contrast to Foster and Clark, it seems to me that the way to a new era of thriving, is to renew our necessary relation to earthly flows and all beings as foodgetters.

An example from my bioregion is a vision of the Great Lakes Commons, linking indigenous and settlers throughout the territory, to revive and share the life of the lands and waters and beings, by "becoming a great ancestor." From the website (www.greatlakescommons.org): "The Great Lakes Commons is a grassroots effort to establish the Great Lakes as a thriving, living commons — shared and sacred waters that we all protect in perpetuity." Its Charter is in five languages: Mohawk, Anishinaabemowin, Spanish, French, and English. By walking and talking together, we can loosen our machine metaphors for nature and return to appreciate cycles of sun and moon, of seasons and tides.

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